

SUPPLEMENTARY MATERIAL

Phylogenetic relationships, distribution and abundance of *Charaxes mtui* Collins Congdon and Bampton, 2017 (Papilionoidea: Nymphalidae: Charaxinae) and its host plant in the Udzungwa mountain forest in southern Tanzania

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Table S1 – DNA sequences for *Charaxes* species in the subgenera *Eriboea* and *Charaxes*. Where the nominal subspecies is listed the species name is shortened to one letter. Abbreviations of country names are: CAR = Central African Republic; DRC = Democratic Republic of the Congo; UK = United Kingdom.

Species name	Country, Locality	Sub genus	Species group	Voucher Code	Source	Accession #	Base pairs
<i>Charaxes castor</i> ssp. unknown	UK, Stratford Butterfly Farm	<i>Charaxes</i>	<i>jasius</i>	NW78-3	GenBank	AY090219.1	1450
<i>Charaxes l. lucyae</i> van Someren, 1975	Tanzania, Tanga	<i>Charaxes</i>	<i>jasius</i>	BC-Turl-0339	GenBank	EZCHB339_09	658
<i>Charaxes cithaeron</i> ssp. unknown	Kenya	<i>Charaxes</i>	<i>tiridates</i>	EV-0032	GenBank	GQ256791.1	1437
<i>Charaxes a. anticlea</i> (Drury, 1782)	Ghana	<i>Eriboea</i>	<i>anticlea</i>	KAP292	GenBank	GQ256772	1458
<i>Charaxes baumanni</i> ssp. unknown	Kenya	<i>Eriboea</i>	<i>anticlea</i>	ABRI-008	GenBank	GQ256774.1	1449
<i>Charaxes blanda</i> Rothschild, 1897	Kenya	<i>Eriboea</i>	<i>anticlea</i>	ABRI-013	GenBank	GQ256782	1487
<i>Charaxes opinatus</i> Heron, 1909	Rwanda	<i>Eriboea</i>	<i>anticlea</i>	ABRI-015	GenBank	GQ256847	1487
<i>Charaxes taverniersi</i> Berger, 1975	Cameroon	<i>Eriboea</i>	<i>anticlea</i>	BC-Basq1859	BOLD	EZCH233-07	658
<i>Charaxes thysi</i> Capronnier, 1889	DRC, Equateur	<i>Eriboea</i>	<i>anticlea</i>	BC-EV0336	BOLD	EZCHA336-07	658
<i>Charaxes a. achaemenes</i> Felder & Felder, [1867]	Zambia	<i>Eriboea</i>	<i>etesipe</i>	ABRI-018	GenBank	GQ256761.1	1487
<i>Charaxes paradoxa</i> Lathy, 1925	Grande Comore	<i>Eriboea</i>	<i>etesipe</i>	BC-Turl-0379	BOLD	EZCHB379-09	658
<i>Charaxes angelae</i> Minig, 1975	Côte d'Ivoire	<i>Eriboea</i>	<i>etheocles</i>	BC-EV0820	BOLD	EZCH539-07	609
<i>Charaxes b. berkeleyi</i> van Someren & Jackson, 1957	Kenya	<i>Eriboea</i>	<i>etheocles</i>	EV-0052	GenBank	GQ256776.1	1487
<i>Charaxes bernstorffi</i> Rydon, 1982	Yemen	<i>Eriboea</i>	<i>etheocles</i>	BC-Turl-0091	BOLD	EZCHE091-07	658
<i>Charaxes bocqueti oubanguiensis</i> Minig, 1975	Gabon, Chaillou Mountains	<i>Eriboea</i>	<i>etheocles</i>	BC-EV0635	BOLD	EZCH354-07	658
<i>Charaxes cedreatis</i> Hewitson, 1874	Gabon, Kango	<i>Eriboea</i>	<i>etheocles</i>	BC-Basq1672	BOLD	EZCH046-07	658
<i>Charaxes chepalungu</i> van Someren, 1969	Kenya	<i>Eriboea</i>	<i>etheocles</i>	BC-EV0078	BOLD	EZCHA078-07	658
<i>Charaxes chevroti</i> Collins & Larsen, 2005	Nigeria	<i>Eriboea</i>	<i>etheocles</i>	BC-Turl-0196	BOLD	EZCHB196-09	648
<i>Charaxes c. chintechi</i> van Someren, 1975	Malawi, Nkhata Bay	<i>Eriboea</i>	<i>etheocles</i>	BC-EV0297	BOLD	EZCHA297-07	658
<i>Charaxes chunguensis</i> White & Grant, 1986	Tanzania, Dodoma	<i>Eriboea</i>	<i>etheocles</i>	BC-Turl-0122	BOLD	EZCHE122-07	658
<i>Charaxes congdoni</i> Collins, 1989	Tanzania	<i>Eriboea</i>	<i>etheocles</i>	EV-0053	GenBank	GQ256792.1	1487
<i>Charaxes contrarius lukosi</i> Rydon, Congdon & Collins, 2007	Tanzania, Kilimanjaro	<i>Eriboea</i>	<i>etheocles</i>	BC-EV0199	BOLD	EZCHA199-07	658
<i>Charaxes dewitzi</i> Butler, 1895 ¹	DRC, Kinshasa	<i>Eriboea</i>	<i>etheocles</i>	BC-EV0174	BOLD	EZCHA174-07	640
<i>Charaxes diversiforma</i> van Someren & Jackson, 1957 ²	Angola, Prov. Cuanza Sul	<i>Eriboea</i>	<i>etheocles</i>	BC-EV0180	BOLD	EZCHA180-07	658
<i>Charaxes ethalion</i> ssp. unknown	Tanzania	<i>Eriboea</i>	<i>etheocles</i>	ABRI-001	GenBank	GQ256801.1	1487
<i>Charaxes e. etheocles</i> (Cramer, 1777)	Ghana	<i>Eriboea</i>	<i>etheocles</i>	KAP296	GenBank	GQ256804.1	1458
<i>Charaxes fionae</i> Henning, 1977	Burundi ³	<i>Eriboea</i>	<i>etheocles</i>	BC-EV0280	BOLD	EZCHA280-07	658
<i>Charaxes fulgurata</i> Aurivillius, [1899]	DRC, Katanga	<i>Eriboea</i>	<i>etheocles</i>	BC-EV1110	BOLD	EZCH829-07	658
<i>Charaxes galawadiwosi</i> Plantrou & Rougeot, 1979	Ethiopia	<i>Eriboea</i>	<i>etheocles</i>	EV-0058	GenBank	GQ256812.1	1436
<i>Charaxes gallagheri</i> van Son, 1962	Zimbabwe, Harare	<i>Eriboea</i>	<i>etheocles</i>	BC-Turl-0075	BOLD	EZCHE075-07	658
<i>Charaxes grahamei</i> van Someren, 1969	Tanzania, Kigoma	<i>Eriboea</i>	<i>etheocles</i>	BC-EV0219	BOLD	EZCHA219-07	658
<i>Charaxes howarthi</i> Minig, 1976	DRC	<i>Eriboea</i>	<i>etheocles</i>	EV-0059	GenBank	GQ256816.1	1452
<i>Charaxes k. karkloof</i> van Someren & Jackson, 1957	South Africa, E Cape	<i>Eriboea</i>	<i>etheocles</i>	BC-Turl-0216	BOLD	EZCHB216-09	649
<i>Charaxes k. kheili</i> Staudinger, 1896	CAR	<i>Eriboea</i>	<i>etheocles</i>	BC-EV0171	BOLD	EZCHA171-07	658
<i>Charaxes k. kheili</i> Staudinger, 1896 ⁴	Cameroon	<i>Eriboea</i>	<i>etheocles</i>	EV-0068	GenBank	GQ256845.1	1487
<i>Charaxes kirki daria</i> Rothschild, 1903	Ethiopia, Dila Prov., SNNPR	<i>Eriboea</i>	<i>etheocles</i>	BC-EV0900	BOLD	EZCH619-07	658
<i>Charaxes mafugensis</i> Jackson, 1956	Rwanda	<i>Eriboea</i>	<i>etheocles</i>	ABRI-012	GenBank	GQ256835.1	1487
<i>Charaxes margaretae</i> Rydon, 1980	Malawi, Mulanje	<i>Eriboea</i>	<i>etheocles</i>	BC-Turl-0128	BOLD	EZCHE128-07	590

<i>Charaxes marieps</i> van Someren & Jackson, 1957	South Africa, Mpumalanga	<i>Eriboea</i>	<i>etheocles</i>	BC-EV0919	BOLD	EZCH638-07	555
<i>Charaxes m. martini</i> van Someren, 1966	Malawi, Mulanje	<i>Eriboea</i>	<i>etheocles</i>	BC-EV0289	BOLD	EZCHA289-07	658
<i>Charaxes m. mccleryi</i> van Someren, 1972	Tanzania, Uluguru, Bunduki Hill	<i>Eriboea</i>	<i>etheocles</i>	EV-0048	GenBank	GBLN2362-09	1473
<i>Charaxes mtuiiae</i> Collins Congdon and Bampton, 2017	Tanzania, Kihansi R. Gorge	<i>Eriboea</i>	<i>etheocles</i>	WFBM0034679	GenBank	MZ444664	616
<i>Charaxes nyikensis</i> van Someren, 1975	Malawi, Chitipa district	<i>Eriboea</i>	<i>etheocles</i>	BC-EV0294	BOLD	EZCHA294-07	658
<i>Charaxes nyungwensis</i> Vingerhoedt & Vande weghe, 2011	Rwanda	<i>Eriboea</i>	<i>etheocles</i>	BC-EV0023	BOLD	EZCHA023-07	658
<i>Charaxes pambanus</i> Jordan, 1925	Pemba Island	<i>Eriboea</i>	<i>etheocles</i>	EV-0067	GenBank	GQ256850.1	1487
<i>Charaxes phaeus</i> Hewitson, 1877	Malawi, Thyolo	<i>Eriboea</i>	<i>etheocles</i>	BC-EV0301	BOLD	EZCHA301-07	658
<i>Charaxes plantroui</i> Minig, 1975	Ghana	<i>Eriboea</i>	<i>etheocles</i>	KAP507	GenBank	GQ256855	1456
<i>Charaxes pondoensis</i> van Someren, 1967	South Africa, Eastern Cape	<i>Eriboea</i>	<i>etheocles</i>	BC-Turl-0215	BOLD	EZCHB215-09	658
<i>Charaxes sidamo</i> Plantrou & Rougeot, 1979	Ethiopia	<i>Eriboea</i>	<i>etheocles</i>	EV-0050	GenBank	GQ256863.1	1450
<i>Charaxes turlini</i> Minig & Plantrou, 1978	Uganda	<i>Eriboea</i>	<i>etheocles</i>	ABRI-016	GenBank	GQ256871.1	1487
<i>Charaxes u. usambarae</i> van Someren & Jackson, 1952	Tanzania, Tanga	<i>Eriboea</i>	<i>etheocles</i>	BC-EV0159	BOLD	EZCHA159-07	658
<i>Charaxes u. maridadi</i> Collins, 1987	Tanzania, Morogoro	<i>Eriboea</i>	<i>etheocles</i>	BC-Turl -0108	BOLD	EZCHE108-07	658
<i>Charaxes vansoni</i> van Someren, 1975	South Africa, Limpopo	<i>Eriboea</i>	<i>etheocles</i>	BC-EV0908	BOLD	EZCH627-07	658
<i>Charaxes variata</i> van Someren, 1969	Zambia, Prov. Chiwona	<i>Eriboea</i>	<i>etheocles</i>	BC-EV0913	BOLD	EZCH632-07	658
<i>Charaxes v. virilis</i> van Someren & Jackson, 1952	Ghana	<i>Eriboea</i>	<i>etheocles</i>	KAP508	GenBank	GQ256874.1	1437
<i>Charaxes williami</i> Henning, 2002	Zambia, North-Western	<i>Eriboea</i>	<i>etheocles</i>	BC-EV0169	BOLD	EZCHA169-07	658
<i>Charaxes d. dilutus</i> Rothschild, 1898	Malawi, Zomba	<i>Eriboea</i>	<i>eupale</i>	BC-EV0290	GenBank	FJ477115	658
<i>Charaxes schiltzei</i> Bouyer, 1991	DRC, Kivu	<i>Eriboea</i>	<i>eupale</i>	BC-EV0957	GenBank	FJ477166	658
<i>Charaxes schultzei</i> Röber, 1936	DRC, Katanga	<i>Eriboea</i>	<i>eupale</i>	BC-EV0146	GenBank	EZCHA146-07	658
<i>Charaxes s. subornatus</i> Schultze, 1916	Gabon	<i>Eriboea</i>	<i>eupale</i>	EV-0043	GenBank	GQ256867	1431
<i>Charaxes hildebrandti gillesi</i> Plantrou, 1973	Ghana	<i>Eriboea</i>	<i>hildebrandti</i>	KAP113	GenBank	GQ256815	1458
<i>Charaxes j. jahluca</i> (Trimen, 1862)	South Africa, Karoo	<i>Eriboea</i>	<i>jahluca</i>	EV-0014	GenBank	GQ256821	681

Footnotes:

¹ *C. manica subrubidus* was synonymised with *C. dewitzi* Butler, 1895 by Ackery *et al.*, 1995.

² *C. viola loandae* van Someren, 1969 was synonymised with *C. diversiforma* van Someren & Jackson, 1957 by Turlin (2011).

³ *C. fionae* has been recorded from Gombe Stream National Park in Tanzania, which is just across the border from Burundi.

⁴ *C. northcotti* Rothschild, 1899 was synonymised with *C. kheili* to become *C. kheili northcotti*. This ssp. only occurs in West Africa, and has not been recorded in Cameroon, but *C. k. kheili* has.

Table S2 – Relative abundance of 48 other species of butterflies recorded in the study area. All Nymphalidae except hesperiids (*).

No.	Species name	Samples	% of Total
1	<i>Melanitis leda</i> (Linnaeus, 1758)	190	31.9
2	<i>Bicyclus danckelmani</i> (Rogenhofer, 1891)	100	16.8
3	<i>Gnophodes betsimena diversa</i> (Butler, 1880)	49	8.2
4	<i>Bicyclus a. anynana</i> (Butler, 1879)	29	4.9
5	<i>Bicyclus ena</i> (Hewitson, 1877)	18	3.0
6	<i>Eurytela dryope angulata</i> (Aurivillius, 1899]	18	3.0
7	<i>Aphysoneura p. pigmentaria</i> (Karsch, 1894)	14	2.4
8	<i>Bicyclus safitza</i> (Hewitson, 1851)	13	2.2
9	<i>Sevenia b. boisduvali</i> (Wallengren, 1857)	12	2.0
10	<i>Eurytela h. hiarbas</i> (Drury, 1782)	11	1.9
11	<i>Euphaedra zaddachi</i> (Dewitz, 1879)	10	1.7
12	<i>Junonia terea elgiva</i> (Hewitson, 1864]	10	1.7
13	<i>Sevenia morantii</i> (Trimen, 1881)	10	1.7
14	<i>Brakefieldia perspicua</i> (Trimen, 1873)	9	1.5
15	<i>Neptis serena</i> (Overlaet, 1955)	8	1.3
16	<i>Euptera k. kinugnana</i> (Grose-Smith, 1889)	8	1.3
17	<i>Euphaedra (Neophronia) n. neophron</i> (Hopffer, 1855)	7	1.2
18	<i>Byblia ilithyia</i> (Drury, 1770)	6	1.0
19	<i>Brakefieldia simonsii</i> (Butler, 1877)	6	1.0
20	<i>Pseudacraea lucretia expansa</i> (Butler, 1878)	6	1.0
21	<i>Bicyclus c. campina</i> (Aurivillius, 1901)	5	0.8
22	<i>Catacroptera c. cloanthe</i> (Stoll, 1781)	5	0.8
23	<i>Sevenia garega</i> (Karsch, 1892)	5	0.8
24	<i>Sallya</i> sp.	5	0.8
25	<i>Brakefieldia perspicua</i> (Trimen, 1873)	4	0.7
26	<i>Melanitis lybia</i> (Distant, 1882)	4	0.7

27	<i>Aterica g. galene</i> (Brown, 1776)	3	0.5
28	<i>Borbo</i> sp.*	3	0.5
29	<i>Harma theobene blassi</i> (Weymer, 1892)	3	0.5
30	<i>Phalanta phalantha aethiopica</i> (Rothschild & Jordan, 1903)	3	0.5
31	<i>Precis tugela aurorina</i> (Butler, 1894)	3	0.5
32	<i>Zenonia</i> sp.*	2	0.3
33	<i>Acraea</i> sp.	1	0.2
34	<i>Amauris (Amaura) t. tartarea</i> (Mabille, 1876)	1	0.2
35	<i>Evena sikorana</i> (Rogenhofer, 1889)	1	0.2
36	<i>Euryphura (Crenidomimas) concordia</i> (Hopffer, 1855)	1	0.2
37	<i>Brakefieldia perspicua</i> (Trimen, 1873)	1	0.2
38	<i>Brakefieldia simonsii</i> (Butler, 1877)	1	0.2
39	<i>Brakefieldia p. phaea</i> (Karsch, 1894)	1	0.2
40	<i>Hypolimnas anhedon wahlbergi</i> (Wallengren, 1857)	1	0.2
41	<i>Junonia n. natalica</i> (Felder & Felder, 1860)	1	0.2
42	<i>Physcaeneura jacksoni</i> (Carcasson, 1961)	1	0.2
43	<i>Pseudacraea eurytus conradti</i> (Oberthür, 1893)	1	0.2
44	<i>Pseudargynnis hegemone</i> (Godart, [1819])	1	0.2
45	<i>Protogoniomorpha parhassus</i> (Drury, 1782)	1	0.2
46	<i>Protogoniomorpha temora virescens</i> (Suffert, 1904)	1	0.2
47	<i>Sevenia rosa</i> (Hewitson, 1877)	1	0.2
48	<i>Sevenia pechueli rhodesiana</i> (Rothschild, 1918)	1	0.2
	Total	595	100

Table S3a – Sampling effort for *Charaxes mtuiae* – non adult forms (eggs, caterpillars, pupae, pupal cases) on leaves of tree branches of *Diospyros natalensis*.

Month	Days	Persons	Hours per day	Person-hours	Samples obtained
Apr-17	3	7	7	147	0
May-17	4	3	7	84	0
Nov-17	4	5	7	140	0
Feb-18	5	5	7	175	0
Sep-18	4	7	7	196	4
Oct-18	1	2	5	10	0
Dec-18	10	6	5	300	0
Total searching time				1052	4

Table S3b – Sampling effort for *Charaxes mtuiae* – adults using 26 baited traps and sweep-nets.

Month	Days	Persons	Hours per day	Person-hours	Samples obtained
Apr-17	5	1	10	50	0
May-17	14	1	10	140	0
Aug-17	9	1	10	90	0
Oct-17	9	1	10	90	0
Nov-17	13	1	10	130	0
Feb-18	13	1	10	130	0
May-18	9	1	10	90	0
Sep-18	5	1	10	50	0
Oct-18	9	1	10	90	0
Nov-18	8	1	10	80	0
Dec-18	10	1	10	100	0
Total trapping time				1060	0
Total sampling time				2112	4

Table S4 – *Charaxes* phagism [references: Kielland 1990, Larsen, 1999 and Williams 2021].

No.	Species name	No.	Host plants			Alt. (m)	Phagism
			Orders	Families	Genera		
1	<i>Charaxes p. pollux</i> (Cramer, 1775)	101	Geraniales, Malpighiales, Sapindales	Melianthaceae, Sapindaceae, Euphorbiaceae, Anacardiaceae	<i>Bersama</i> , <i>Deinbollia</i> , <i>Flueggea</i> , <i>Securinea</i> , <i>Sorindeia</i>	300–1900	Poly-
2	<i>Charaxes cithaeron kennethi</i> Poulton, 1926	47	Celastrales, Fabales, Malvales, Rosales	Hippocrateaceae, Mimosoideae, Papilionoideae, Sterculiaceae, Tiliaceae, Ulmaceae	<i>Afzelia</i> , <i>Baphia</i> , <i>Hippocratea</i> , <i>Acacia</i> , <i>Albizia</i> , <i>Craibia</i> , <i>Cola</i> , <i>Grewia</i> , <i>Celtis</i> , <i>Chaetachme</i> , <i>Trema</i>	< 1700	Poly-
3	<i>Charaxes a. acuminatus</i> Thureau, 1903	26	Sapindales, Geraniales	Sapindaceae, Melianthaceae	<i>Allophylus</i> , <i>Bersama</i>	300–2000	Poly-

	<i>Charaxes violetta melloni</i> Fox, 1963	18	Fabales, Sapindales	Fabaceae, Sapindaceae	<i>Blighia, Deinbollia, Afzelia, Brachystegia</i>	300–1700	Poly-
5	<i>Charaxes druceanus proximans</i> Joicey & Talbot, 1922	12	Geraniales, Myrtales, Apiales	Melianthaceae, Myrtaceae, Araliaceae,	<i>Eugenia, Syzygium, Protea, Schefflera, Bersama</i>	1200–2000	Poly-
6	<i>Charaxes ethalion littoralis</i> van Someren, 1967	12	Fabales, Rosales	Mimosaceae, Rhamnaceae	<i>Albizia, Piptadenia, Newtonia, Tamarindus, Dichrostachys, Scutia</i>	< 2000	Poly-
7	<i>Charaxes brutus alcyone</i> Stoneham, 1943	11	Sapindales, Geraniales, Malpighiales, Malvales, Sapindales	Sapindaceae, Melianthaceae, Euphorbiaceae, Tiliaceae, Meliaceae,	<i>Flueggea, Securinega, Bersama, Ekebergia, Lepidotrichlina, Turraea, Melia, Entandrophragma, Trichilia</i>	< 2600	Poly-
8	<i>Charaxes protoclea azota</i> (Hewitson, 1877)	11	Fabales, Myrtales	Caesalpinioideae, Myrtaceae	<i>Afzelia, Berlinia, Bussea, Julbernardia, Brachystegia, Syzygium</i>	< 1700	Poly-
9	<i>Charaxes jahluca argynnides</i> Westwood, 1864	10	Malvales, Fabales, Sapindales	Tiliaceae, Mimosoideae, Sapindaceae, Papilionoideae	<i>Grewia, Acacia, Pappia, Haplocoelum, Dalbergia</i>	< 1200	Poly-
10	<i>Charaxes etheocles carpenteri</i> van Someren & Jackson, 1957	2	Rosales, Fabales	Ulmaceae and Mimosoideae, Caesalpinioideae	<i>Scutia, Celtis, Albizia, Bandeiraea</i>	> 1100	Poly-
11	<i>Charaxes c. castor</i> (Cramer, 1775)	1	Fabales, Rosales, Lamiales, Malvales, Malpighiales, Celastrales	Fabaceae, Umalceae, Verbenaceae, Malvaceae, Euphorbiaceae, Celastaceae, Celastraceae	<i>Afzelia, Bauhinia, Brachystegia, Copaifera, Cassia, Chaetachme, Erythrina, Entada, Maytenus, Cassine, Croton, Tragia, Bridelia, Hibiscus, Sorghum, Gmelina</i>	800–2000	Poly-
12	<i>Charaxes eupale latimargo</i> Joicey & Talbot, 1921	1	Fabales, Rosales	Mimosoideae, Rhamnaceae	<i>Albizia, Scutia</i>	300–2100	Poly-
13	<i>Charaxes s. saturnus</i> (Butler, 1866)	1	Fabales, Celastrales, Malpighiales	Fabaceae, Celastraceae, Euphorbiaceae,	<i>Hibiscus, Croton, Afzelia, Bauhinia, Brachystegia, Burkea, Schotia, Maytenus, Elaeodendron, Protea</i>	200–2200	Poly-
14	<i>Charaxes varanes vologes</i> (Mabille, 1876)	25	Sapindales	Sapindaceae, Anacardiaceae	<i>Allophylus, Cardiospermum, Schmidelia, Searsia</i>	< 2300	Oligo-
15	<i>Charaxes macclounii</i> Butler, 1895	8	Poales	Poaceae	<i>Oxytenanthera, Arundinaria</i>	< 2000	Oligo-
16	<i>Charaxes l. lasti</i> Grose-Smith, 1889	4	Fabales	Caesalpinioideae	<i>Julbernardia, Paramacrolobium, Afzelia</i>	< 900	Oligo-
17	<i>Charaxes b. baumanni</i> Rogenhofer, 1891	3	Fabales	Mimosoideae, Caesalpinioideae	<i>Acacia, Pterolobium, Caesalpinia</i>	1400–2100	Oligo-
18	<i>Charaxes wakefieldi</i> (Ward, 1873)	2	Sapindales	Sapindaceae	<i>Deinbollia, Lecaniodiscus</i>	< 2000	Oligo-
19	<i>Charaxes a. achaemenes</i> Felder & Felder, [1867]	1	Fabales	Caesalpinioideae, Fabaceae and Papilionoideae	<i>Brachystegia, Pterocarpus, Xanthocercis, Dalbergia</i>	300–2000	Oligo-
20	<i>Charaxes b. bohemani</i> Felder & Felder, 1859	1	Fabales	Caesalpinioideae and Papilionoideae	<i>Brachystegia, Afzelia, Berlinia, Isoberlinia, Julbernardia, Dalbergia, Baphia</i>	< 2000	Oligo-
21	<i>Charaxes g. guderiana</i> (Dewitz, 1879)	1	Fabales	Caesalpinioideae, Mimosoideae, Papilionoideae	<i>Brachystegia, Julbernardia, Amblygonocarpus, Dalbergia</i>	< 2300	Oligo-
22	<i>Charaxes howarthi</i> Minig, 1976	1	Fabales	Caesalpinioideae, Mimosoideae	<i>Brachystegia, Albizia</i>	400–2000	Oligo-
23	<i>Charaxes candiopo</i> (Godart, [1824])	13	Malpighiales	Euphorbiaceae	<i>Croton</i>	< 2600	Mono-
24	<i>Charaxes a. aubyni</i> van Someren & Jackson, 1952	6	Fabales	Mimosoideae	<i>Albizia</i>	400–2400	Mono-
25	<i>Charaxes mtuiiae</i> Collins, Congdon & Bampton, 2017	4	Ericales	Ebenaceae	<i>Diospyros</i>	950–1100	Mono-
26	<i>Charaxes t. tiberius</i> (Grose-Smith, 1889)	4	Sapindales	Sapindaceae	<i>Deinbollia</i>	>1350	Mono-
27	<i>Charaxes congdoni</i> Collins, 1989	2	Fabales	Mimosoideae	<i>Albizia</i>	1600–2200	Mono-
28	<i>Charaxes u. usambarae</i> van Someren & Jackson, 1952	1	Fabales	Mimosaceae	<i>Albizia</i>	> 800	Mono-
29	<i>Charaxes l. lucyae</i> van Someren, 1975	1	not known	not known	not known	1500–2100	Unknown

Table S5 – Number of other woody plants described at species/genera level recorded co-existing with *Diospyros natalensis* at the study sites (127 taxa 9412 stems)

Plant species or genus	Genus level	Species level	Total taxa
<i>Acalypha chirindica</i>		9	9
<i>Adenium gummifera</i>		15	15
<i>Aframomum angustifolium</i>		2	2
<i>Agelaea heterophylla</i>		298	298
<i>Albizia gummifera</i>		12	12
<i>Allophylus congolanus</i>		39	39
<i>Anthocleista grandiflora</i>		1	1
<i>Antiaris toxicaria</i> var. <i>usambarensis</i>		4	4
<i>Antidesma membranaceum</i>		1	1
Asclepiadiaceae		2	2
<i>Asparagus africanus</i>		75	75
<i>Asplenium</i> sp.	16		16
<i>Begonia</i> sp.	10		10
<i>Bersama abyssinica</i>		30	30
<i>Blighia unijugata</i>		1	1
<i>Bridelia micrantha</i>		3	3
<i>Canthium</i> sp. (big leaves)	9		9
<i>Caparris erythrocarpus</i>		1	1
<i>Chazaliella abrupta</i>		29	29
<i>Chionanthus battiscombei</i>		4	4
<i>Clausena anisata</i>		39	39
<i>Clerodendrum cephalanthum</i>		2	2
Climber (<i>Strombosia</i> like)		42	42
<i>Coffea /psychotria</i>		118	118
<i>Coffea /psychotria</i> sp. 1	75		75
<i>Coffea kihansiensis</i>		2	2
<i>Coffea</i> sp. 2	2		2
<i>Cola scheffleri</i>		1	1
<i>Cola stelechantha</i>		3	3
<i>Colocasia</i> sp.	50		50
<i>Combretum paniculatum</i>		18	18
<i>Commelina benghalensis</i>		5	5
<i>Cremaspora triflora</i>		25	25
<i>Cussonia spicata</i>		3	3
<i>Cyphostemma pseudonjegerre</i>		18	18
<i>Dalbergia obovata</i>		5	5
<i>Dalbergia nitidula</i>		7	7
<i>Deinbollia borbonica</i>		4	4
<i>Dictyophleba lucida</i>		29	29
<i>Diospyros natalensis</i>		1173	1173
<i>Diospyros</i> sp. (small leaves)	15		15
<i>Diospyros zombensis</i>		5	5
<i>Dracaena laxissima</i>		137	137
<i>Dracaena usambarensis</i>		44	44
<i>Drypetes natalensis</i>		6	6
<i>Englerophytum natalense</i>		53	53
<i>Erythroxylum emarginatum</i>		10	10
Ferns		518	518
<i>Ficus cyathistipula</i>		3	3
<i>Ficus natalensis</i>		4	4
<i>Ficus</i> sp. (small leaves)		1	1
<i>Ficus</i> sp. 3	18		18
<i>Filicium decipiens</i>		204	204
<i>Flacourtia indica</i>		5	5
<i>Garcinia semsei</i>		44	44
<i>Gonatopus boivinii</i>		125	125
<i>Greenwayodredron/ Isolona</i>		22	22
<i>Haplocoelum foliolosum</i>		58	58
<i>Impatiens</i> sp.	295		295
<i>Jasminum</i> sp.	1		1

<i>Justicia</i> sp. 2	2		2
<i>Khaya anotheca</i>		3	3
<i>Lagynias pallidiflora</i>		4	4
<i>Landolphia kirkii</i>		41	41
<i>Leptactina</i> sp.	14		14
<i>Ludia mauritiana</i>		9	9
<i>Ludia mauritiana</i>		150	150
<i>Macaranga capensis</i>		1	1
<i>Maesa lanceolata</i>		2	2
<i>Markhamia lutea</i>		1	1
<i>Maytenus acuminata</i>		231	231
<i>Maytenus senegalensis</i>		46	46
<i>Memecylon cogniauxii</i>		446	446
<i>Memecylon</i> sp. 2 (Big leaves)	34		34
<i>Memecylon</i> sp. 3	16		16
<i>Memecylon</i> sp. 3 (climber)	3		3
<i>Memecylon verruculosum</i>		51	51
<i>Millettia oblata</i> ssp. <i>intermedia</i>		3	3
<i>Mimusops kummel</i>		21	21
<i>Mimusops</i> sp. (small leaves)	2		2
<i>Monanthotaxis discrepantinervia</i>		3	3
<i>Mystroxydon aethiopicum</i>		162	162
<i>Newtonia buchananii</i>		6	6
<i>Ochna oxyphylla</i>		5	5
<i>Olea capensis</i>		334	334
<i>Oxyanthus speciosus</i>		37	37
<i>Parinari excelsa</i>		82	82
<i>Paullinia pinnata</i>		4	4
<i>Pavetta</i> sp. 3	9		9
<i>Pavetta</i> sp. 2	2		2
<i>Pentas bussei</i>		222	222
<i>Psychotria goetzei</i>		376	376
<i>Psychotria</i> sp. 3	1		1
<i>Pterocarpus tinctorius</i>		5	5
<i>Rhoicissus tridentata</i>		2	2
<i>Rhus longipes</i>		4	4
<i>Rinorea scheffleri</i>		25	25
<i>Rubiaceae</i> 1		19	19
<i>Rubiaceae</i> 3		27	27
<i>Rutidea syringoides</i>		49	49
<i>Salacia</i> sp.	1		1
<i>Schrebera alata</i>		20	20
<i>Scolopia rhamniphylla</i>		163	163
<i>Senecio bojeri</i>		36	36
<i>Smilax anceps</i>		1	1
<i>Sorindeia madagascariensis</i>		1534	1534
<i>Sphaerocoryne gracilis</i>		21	21
<i>Strychnos lucens</i>		4	4
<i>Synsepalum ceraciferum</i>		120	120
<i>Synsepalum msolo</i>		1	1
<i>Teclea nobilis</i>		21	21
<i>Teclea simplifolia</i>		17	17
<i>Tiliacora funifera</i>		11	11
<i>Tricalysia pallens</i>		1030	1030
<i>Trichocladus ellipticus</i>		4	4
<i>Trilepisium madagascariense</i>		44	44
<i>Trimeria grandifolia</i>		10	10
<i>Triumfetta rhomboidea</i>		1	1
<i>Turraea mombassana</i>		58	58
<i>Uvaria tanzaniae</i>		15	15
<i>Vangueria infausta</i>		4	4
<i>Vangueria</i> sp. (big hairy leaves + stem)		5	5
<i>Vepris simplicifolia</i>		1	1
<i>Vernonia</i> sp.	78	2	80

<i>Vitex</i> sp.	2		2
<i>Zanthoxylum usambarense</i>		4	4
Grand Total no. of stems	655	8757	9412
No. of taxa	22	105	127

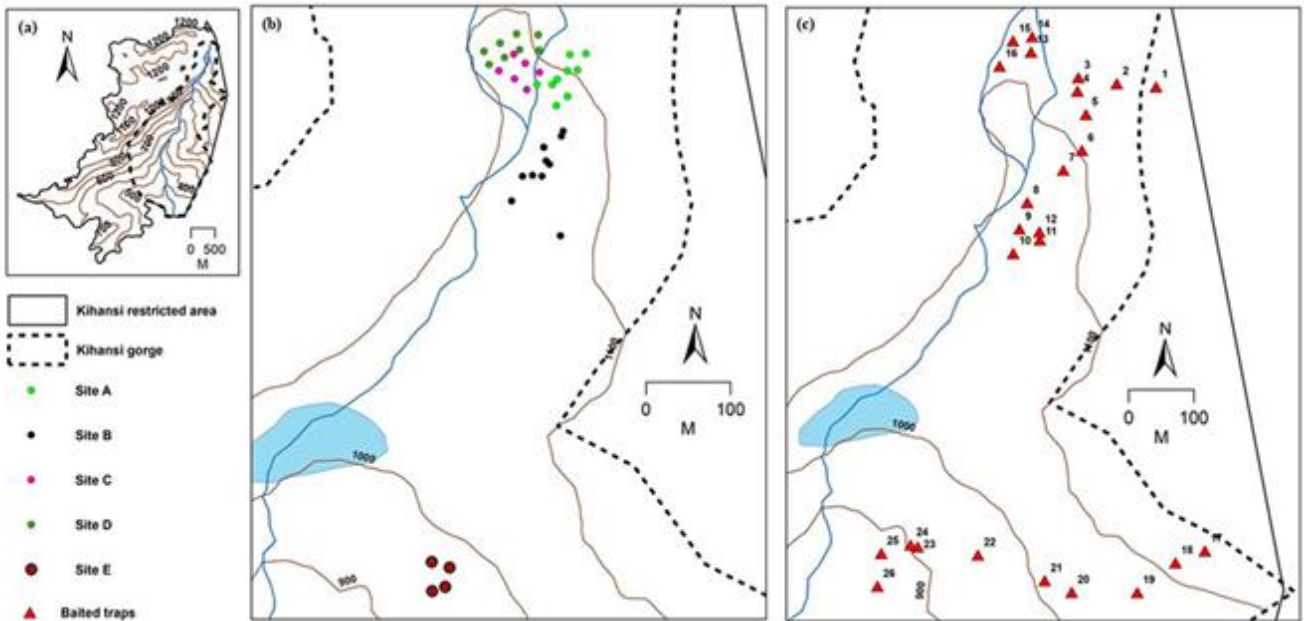


Figure S1a–c – Locations of sampling sites for *Diospyros natalensis* (b) and baited traps for *Charaxes mtuiae* (c) in the Kihansi gorge within the restricted area owned by Tanzania Electrical Company (a) [note: the dots on (b) show the corners of a site].

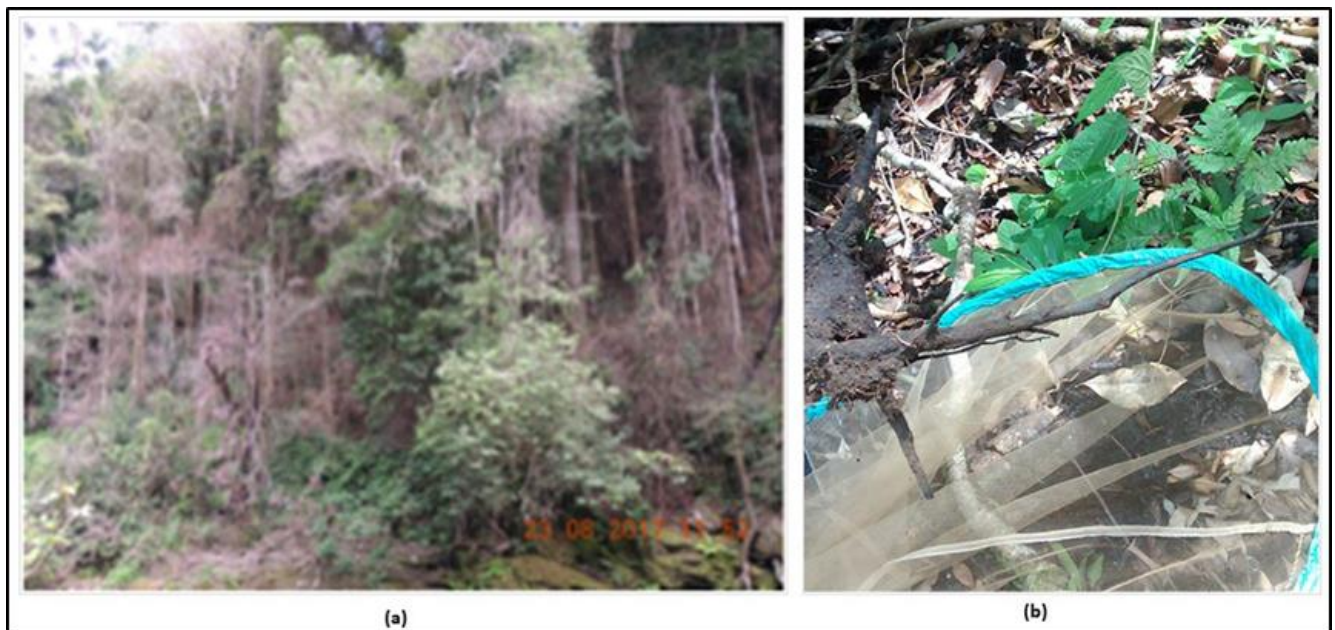


Figure S2a & b – Impact of wildfires on the forest: (a) *Diospyros natalensis* stems killed by wildfire in 2016 in the Kihansi Forest River gorge; (b) the extent of fire damage to the roots of *D. natalensis*.

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